

WHAT IS CLAIMED IS:

- 1 1. An isolated nucleic acid of any one of (a) to (d) below:
 - 2 (a) a nucleic acid encoding a protein comprising the amino acid sequence of any
3 one of SEQ ID NOS:2, 4, 6 and 8,
 - 4 (b) a nucleic acid comprising a coding region in the nucleotide sequence of any
5 one of SEQ ID NOS:1, 3, 5 or 7,
 - 6 (c) a nucleic acid encoding a protein that comprises the amino acid sequence
7 of any one of SEQ ID NOS:2, 4, 6 and 8, in which one or more amino acids are replaced,
8 deleted, inserted and/or added and that is functionally equivalent to the protein comprising
9 the amino acid sequence of any one of SEQ ID NOS:2, 4, 6 and 8, and
 - 10 (d) a nucleic acid that hybridizes under stringent conditions with the nucleic acid
11 comprising the nucleotide sequence of any one of SEQ ID NOS:1, 3, 5 or 7, and that encodes
12 a protein functionally equivalent to the protein comprising the amino acid sequence of any
13 one of SEQ ID NOS:2, 4, 6 or 8.
- 1 2. An isolated nucleic acid encoding the amino acid sequence of any one of
2 SEQ ID NOS:2, 4, 6 and 8 or a fragment thereof.
- 1 3. A vector into which the nucleic acid of claim 1 is inserted.
- 1 4. A vector into which the nucleic acid of claim 2 is inserted.
- 1 5. A transformant harboring the nucleic acid of claim 1.
- 1 6. A transformant harboring the nucleic acid of claim 2.
- 1 7. A transformant harboring the vector of claim 3.
- 1 8. A transformant harboring the vector of claim 4.
- 1 9. A substantially purified polypeptide encoded by the nucleic acid of claim 1.
- 1 10. A substantially purified polypeptide encoded by the nucleic acid of claim 2.

1 11. A method for producing a polypeptide, the method comprising the steps of
2 culturing the transformant of claim 3 and recovering a polypeptide expressed from the
3 transformant or the culture supernatant thereof.

1 12. A method for producing a polypeptide, the method comprising the steps of
2 culturing the transformant of claim 4 and recovering a polypeptide expressed from the
3 transformant or the culture supernatant thereof.

1 13. An antibody against the polypeptide of claim 9.

1 14. An antibody against the polypeptide of claim 10.

1 15. A polynucleotide that hybridizes with the nucleic acid comprising the
2 nucleotide sequence of any one of SEQ ID NOS:1, 3, 5 and 7 or the complementary strand
3 thereof and that comprises at least 15 nucleotides.

1 16. A method for screening a compound binding to the polypeptide of claim 9, the
2 method comprising the steps of:

- 3 (a) contacting a test sample with the polypeptide or a partial peptide thereof,
- 4 (b) detecting a binding activity of the test sample to the polypeptide or the partial
5 peptide thereof, and
- 6 (c) selecting a compound comprising the binding activity to the polypeptide or
7 the partial peptide thereof.

1 17. A method for screening a compound binding to the polypeptide of claim 10,
2 the method comprising the steps of:

- 3 (a) contacting a test sample with the polypeptide or a partial peptide thereof,
- 4 (b) detecting a binding activity of the test sample to the polypeptide or the partial
5 peptide thereof, and
- 6 (c) selecting a compound comprising the binding activity to the polypeptide or
7 the partial peptide thereof.

1 18. A compound isolated by the method of claim 16.

1 19. A compound isolated by the method of claim 17.

1 20. A method for screening a compound that suppresses or promotes expression
2 of the nucleic acid of claim 1, wherein the method comprises the steps of:
3 (a) contacting a test sample with cells expressing the nucleic acid,
4 (b) detecting the expression of the nucleic acid in the cells, and
5 (c) selecting a compound that decreases or increases the expression of the
6 nucleic acid compared with that in the case where the test sample is not contacted with the
7 cells.

1 21. A method for screening a compound that suppresses or promotes expression
2 of the nucleic acid of claim 1, wherein the method comprises the steps of:

3 (a) providing cells into which a vector comprising a reporter gene functionally
4 linked downstream of an expression control region of the nucleic acid of claim 1,
5 (b) contacting a test sample with the cells,
6 (c) detecting the activity of the reporter gene in the cells, and
7 (d) selecting a compound that decreases or increases the activity compared with
8 that in the case where the test sample is not contacted with the cells.

1 22. A compound isolated by the method of claim 20.

1 23. A compound isolated by the method of claim 21.